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VARIOLA, OR SMALL-POX.

By N. CHAPMAN, M. D., *Professor of the Theory and Practice of Physic, in the University of Pennsylvania.*

(Continued from page 185.)

DIVERSIFIED, as this disease is, by gradations of severity, as well as adventitious complications, the phenomena, on dissection, must, of course, be materially different. Generally, the mucous membrane of the stomach and small intestines, exhibits simple phlogosis, is florid and highly injected, in patches, or more diffused, and that of the lungs often in a similar condition, though usually not so intense, with the brain, particularly its arachnoid tissue, scarcely less affected. But, in very violent attacks, the ravages of the disease are manifested throughout the structure of the parts enumerated, to the destruction of organization, in which condition is also sometimes found most of the contents of the abdomen.

The case, however, being of a typhoid, or congestive character, the phenomena, of course, are correspondently modified. Connected with pervading lesions of the mucous membranes, such as livid or ecchymosed blotches, and, sometimes, softening, erosions, or ulcerations, there are venous congestions of the solid organs, in substance, and investing tissues, with effusions, more or less, in the great cavities. Most of the old writers represent the state of things as that of one mass of putrefaction.

Great attention, of late, has been paid, both in France and England, to *post mortem* examinations, in this disease. We learn, that, in the "Maison des Enfants," at Paris, "the appearances were, inflammation and ulceration of the internal coat of the intestines, with pustular eruptions there, and frequently more or less of peritonitis. In three cases, a false membrane, as in croup, was also discovered, lining the whole alimentary canal, from the œsophagus to the rectum.

By Mr. Hastings, and Mr. Alcock, of England, we are told that, united with such phenomena, they thought that the air-passages were even more affected, everywhere throughout their whole extent, meeting with inflammation, and its immediate or secondary consequences—extravasations, adventitious membranes, ulcerations, &c.

Cross, an English writer of reputation, also found what he considered imperfect pustules, in the *primæ viæ*. "The rectum, the colon, and ilium," says he, "were marked with circular patches, distinct and white."

During the late prevalence of small-pox in this city, similar inspections were frequently made, many of which I had opportunities of witnessing. The phenomena, in general, corresponded very much to the preceding description; consisting of a mixture of inflammation and congestion, the one

or the other state preponderating, according to the character of the case. But, though every part of the alimentary canal was occasionally observed to be intensely phlogosed, I saw nothing like regular pustules, nor did I hear of any such having been detected. The mucous tissue, however, of the bowels, in some instances, was found studded with prominent points, which were ascribed only to follicular inflammation, and, I believe, justly; having seen similar appearances in other diseases. It is, indeed, difficult to conceive how a pustule could be formed in this membrane, without its chorion were previously thickened by exposure to the air, such being its natural delicacy of texture, that it would probably burst, long before maturation; and in this opinion, I am confirmed by the report of Contunnius, Cazenave, and Schedel, who, in their numerous dissections, never saw pustules in this situation. It may hence, I think, be concluded, in conformity with general experience, that they are confined to the skin, exclusively, excepting in those rare instances of prolapsus of the uterus, or rectum, where, by long exposure to the atmosphere, the mucous is converted in the tegumentary tissue.

Concerning the exterior surface, the rete mucosum, in very slight affections, it is said, is only inflamed. But, almost invariably, the cutis vera becomes involved in the same state, ending in ulceration. The pock has, in the early stage, a cellular structure, the capsule of which is transparent, and secretes its lymphic contents; losing, at maturity, in a degree, this conformation, and becoming more of a sac, charged with pus. From the fifth to the eighth day of the eruption, may be seen a small circular slough of the cutis, which is held by some of the recent authorities, as the most unerring criterion of genuine small-pox, serving to discriminate it from all its affiliated affections. But it cannot uniformly be trusted. Cases of varicella I have repeatedly known productive of precisely the same effect. By this ulceration, the pits or scars are formed, which, when deep, indelibly remain.

It will not be difficult, after the foregoing exposition of the disease, to deduce its pathology. Like the exanthematous fevers, generally, it is radicated in the mucous membrane of the upper portion of the alimentary tube, to be thrown off, finally, on the tegumentary tissue, as the natural process of cure.

Of such an origin of small-pox, however, the evidence is stronger than of any other of these affections. Not to insist on the proofs of this position, which, in common with its congeners, it supplies, the early symptoms, the relief usually afforded by the appearance of the eruption, and the phenomena on dissection, it may be demonstrated in another way.

By repeated and well conducted experiments, it has been shown that the virus of small-pox can-

not act on the skin, without an abraded or punctured cuticle, in which event it gives rise to local irritation, and, as an ultimate result, the inoculated disease.

The poison, then, must act on an interior surface. Elsewhere I have shown, and, I think, conclusively, that effluvia, contagious or otherwise, are not received through the lungs into the circulation. The stomach, therefore, being the remaining surface, to which the poison can have access, must constitute, of necessity, the seat of the initiatory impression.

It is on such an hypothesis, only, that the difference between the natural and the inoculated varieties of the disease is explicable.

Were the virus actually conveyed into the blood, and did it produce its effects, through the medium of that fluid, it would be of no moment at what point of the system the intromission took place. From the thorough commingling which the blood undergoes, in the route of the circulation, any portion of it being vitiated, the whole must be equally so, and the disease ensuing, in every case, be essentially the same.

Granting, however, as is certainly the fact, that the virus, instead of entering the blood, deranges the system through the medium of sympathy, and the difficulty of explanation at once vanishes.

Disease is violent, or the reverse, according to the importance of the organ injured, the nature of the lesion, and the power and extent of its connexions. No organ is more important than the stomach; the injury it suffers, in this case, is usually severe, and its sympathies, in strength and sensation, seem paramount to those of any other. Consequently, on its reception of the virus, it being deranged, casual small-pox, marked with severe symptoms, is the ordinary result.

But, under inoculation, the poison operating on a small portion of the skin, only, which is more capable of sustaining the injury, and the sympathies of that portion being comparatively weak and limited, it follows that the affection excited must be comparatively moderate. We see this difference strikingly illustrated in the endermic application of active remedies, where, to attain the effect of a dose by the stomach, three or four times the amount is required! What, in fine, is the lesion, that would not prove more serious, inflicted on the stomach, than the skin?

Nor, without the adoption of this hypothesis, can an explanation be had of some other phenomena of the disease. Casual small-pox, we have seen, shows itself on the fourteenth day, while that from inoculation, in half the time; and if, in each instance, the virus acts by entering the circulation, and commingling with the blood, how could this wide difference happen?

It further appears that it is of no moment, in the process of inoculation, whether a large or small quantity of the virus be inserted, the subsequent effect being not at all controlled by this circumstance. An ounce of the virus would, probably, not make a stronger constitutional impression than a single particle. Conceding this, which, to a certain extent, has been demonstrated, and it is scarcely possible to have more conclusive proof that the disease is propagated by irritation, and not by any

contamination of the blood. Not a tittle of evidence, indeed, is there, that the blood is at all vitiated. Can we infect from it, which we ought surely to do, did it contain the virus? As in all other instances of disease, there is here, I repeat, a point primarily irritated, with which the system being brought into concert, a general disturbance ensues.

That such is true, as regards the inoculated disease, or, in other words, that all the subsequent effects are dependent on the original irritation, is as manifest, as that a stream of water, with its various ramifications, proceeds from a fountain by which they are fed. If this be not so, why are we vigilant to preserve the integrity of the parent pustule against those molestations by which it might be affected? Do we not know, that when this is disturbed in its progress, so as to subvert its specific action, that no specific impression is made on the system, and the act of inoculation becomes impaired, or is completely defeated? Duly estimating this fact, I think, no more will be expected, to establish the position for which I am contending.

But, opposed to these views, the occasional occurrence of the disease in the fœtus, is commonly adduced, as of a very decisive nature. Directly the reverse, however, does it import. No one point in physiology is better established, or more generally allowed, than that there is no direct vascular connection between the parent and the offspring. Destitute, then, of any intercommunication by blood-vessels, how can the virus in the natural blood reach the fœtus? The basis of the hypothesis thus proved to be unsound, it of course falls. Two modes, explanatory of the infection of the fœtus, under these circumstances, may be suggested. The contagion might possibly, as has been suggested, though I do not believe it, penetrate through the vagina of the mother, and thus be brought to act on the uterine contents. There is no necessity, however, to resort to such a supposition. To a certain extent, the fœtus is an integral portion of the maternal system, evolved, sustained, and perfected by its resources, and susceptible of derivative impressions from it. Of the precise means, or manner of the connection between them, we are not informed. Nerves are said recently to have been demonstrated in the placenta and umbilical cord. But I insist on no such medium of connection, it not being essential to the support of my proposition. Though to be traced generally to an inosculature of nerves, numerous are the sympathies seemingly independent of it. Not to cite examples, superfluously, to this purport, what, I demand, is the nervous communication between the parotid gland and the testes, or the mammae? What that between the uterus and mammae? Let, however, the explanation be as it may, the fact is undeniable. It is by the adoption of sympathy, that a solution of this problem can only be had, and by which we are supplied with a clue, like that of Ariadne, to conduct us through the mysteries of the animal economy, otherwise more dark and intricate than the Dædalian labyrinth, itself.

An additional remark or two, have I only to make, in regard to the pathology of small-pox. It

sufficiently appears, from what has been said, that irritation commences in the mucous membrane of the stomach, particularly, which, in the natural course of things, is translated to the skin, as a part more capable of bearing it. The metastasis being complete, and firmly established there, the issue is generally favourable. But when the eruption is very extensive, and, especially, confluent, the functions of that integument, so important in the operations of the animal economy, are interrupted, its vitality impaired, or, perhaps, destroyed, and death ensues, from this condition chiefly or entirely.

Not the least curious circumstance connected with the history of this and its kindred affections, is the usual destruction of susceptibility of the system to any repetition of attacks. Great ingenuity has been exercised in the explanation of the enigma, without, however, a ray of light having been shed on it. It were idle to recite the vain conjectures of others, or to obtrude one of my own on the subject, and both I shall hence decline. An inquisitive personage once said to a venerable medical friend of mine, why cannot an individual have the small-pox twice? Tell me, he quickly replied, the reason he has it at all, and I will then endeavour to solve your difficulty! This smart retort, I suspect, conveys about as good an answer, though no explanation, as will be found in any of the graver speculations regarding this mystery.

We now come to the treatment of small-pox, which must be deemed an incurable disease, so far, at least, as that, in common with most, or, perhaps, all affections dependent on a specific contagion, it will run a definite course, in spite of our efforts. Nature, here works to the deliverance of the system, by a series of unintelligible processes which eventuate in the re-creation of the same sort of virus, as that which had originally excited the affection.

Disease is one of the curses entailed on our fallen condition, and, to perpetuate this particular class, it would seem to be ordained, that, we should be debarred the power of counteracting the agency, by which the *seminal principle* is regenerated.

In this respect, the same pains are taken as in the preservation of some of the productions of the animal and vegetable kingdoms. As the seeds, for future regeneration, are there elaborated, so is the principle of contagion, by these contagious fevers.

Could these cases be cured, a chasm would be made in the order of a particular design, which is not permitted. Yet, in conformity with the general benevolence of Providence, what cannot be entirely relieved, we are enabled to palliate, and such is the amount of our best endeavours in small-pox.

It may be collected, from the preceding views, that, where the disease is mild, and pursuing its career undisturbed by anomalous or exasperated affections, it were better to forbear the use of remedies, and to leave it pretty much to the efforts of nature, regulating mainly the diets and temperature. But, our aid being demanded, we adopt essentially the same plan in the variolous, as in ordinary fevers, accommodated to the condition, inflammatory, congestive, or mixed.

To the first of these states I am now to address myself. For the most part, it will be right to commence the treatment with an emetic, and, especially, where we have reason to suspect irritating ingesta, or an otherwise vitiated stomach. But it should be restricted to the earliest stage, and resorted to with all those cautions, regarding the existence of gastric inflammation, on the importance of which I have so often insisted. This remedy, thus timely exhibited, has a signally useful effect in the whole of the eruptive fevers, operating, probably, as well by rectification of the stomach itself, as by occasioning a determination to the cutaneous surface, thus preparing it for the reception of the eruption.

Next, a recurrence is to be had to the saline laxatives, so as to keep the bowels in a soluble state. Calomel was here greatly preferred by the older practitioners, under an impression, that it exercised some specific influence. But such a notion, I think, is unfounded, and, though not pernicious in moderation, mercurial purging is here unnecessary.

Excessive intestinal evacuation, particularly by drastic articles, should, indeed, be carefully avoided, as concentrating and fixing the disease in its original position, or tending greatly to the prevention of the translation of it to the skin, and in other respects, interfering with the natural process of cure.

Mild diaphoretics, the acetate of ammonia, or dulcified spirits of nitre, or a weak solution of emetic tartar, or the neutral mixture, or both combined, are very useful.

It has been remarked, that a perspirable condition is among the most salutary occurrences in the disease, and hence, the importance of the means by which it is excited or maintained.

The preceding remedies may answer. But, when the fever is high, with a heated skin, and much local determination, venesection cannot be dispensed with, and ought to be repeated, as the necessity of the case imposes. There is, however, some difference of opinion among practitioners, as to venesection; though the weight of authority is decidedly in favour of it. Commencing with Rhazes, we may trace the strongest recommendation of it, through Sydenham, Mead, Friend, Huxham, down to Armstrong, and still more recent writers, including, also, the best practitioners of our own country, at all times. That, however, it has no decided curative effect, must be admitted, and the same may be alleged of all other means. But though it does not arrest or change, it abates the intensity of action, and it is on this principle we resort to it, in common with the rest of the measures usually prescribed in the eruptive fevers, among which topical bleeding is of the utmost importance. Most of the vital organs are now deeply implicated, and to preserve the integrity of their structure, should be our principal aim. To relieve tenderness of the epigastrium, and the attendant gastric distress, or phlogosis of the brain, or lungs, or over-fulness of these organs, leeches or cups are incomparably effectual, and ought never to be neglected.

When the surface is very hot, applications of cold water have been recommended, even by aspersion. But, sanctioned as it is, by some high

authority, the propriety of the practice is questionable. It were better, merely to sponge the surface, the utility of which cannot be too strongly urged.

Convulsions in children, which I have said are apt to occur, may, when slight, be relieved by cold applications to the head, and a stimulating pediluvium at the same time. But, should they be violent, the loss of blood, sinapisms to the extremities, and an opiate, become necessary.

The extent of the eruption, and other affections, being pretty nearly proportioned to the degree of reaction, the leading object is to restrain, and keep this down, with which intention the antiphlogistic plan must be pursued in every respect. But, above all, is it required, to have the patient in a cool and well ventilated apartment, more so than in any other disease, and to let him sleep on a mattress, with little covering. It has, indeed, been found beneficial, in hot weather, to expose him, even to the cool external air, where an unusual degree of heat and fever prevails.

This cooling or antiphlogistic practice was adopted early in the history of the disease.

By Rhazes, such is, at least, recommended, which, in the revolutions of the science, and, especially, when the chemists and humoralists got possession of the schools, was entirely changed by their preposterous pathological and therapeutic views.

Considering the virus to be in the blood, and that it was to be expelled through the skin, by the force of fever, they adopted the most heating and alexipharmic measures to accomplish this end.

Giving an account of the practice of the time, Sennertus, who wrote at the beginning of the seventeenth century, says: "That, while using these means, every attention is to be paid, especially in winter, to the exclusion of cold air. The patient, therefore, is to be tended in a warm chamber, and carefully covered up, lest by closing the pores of the skin, the efforts of nature should be impeded, the humours driven upon internal organs, and matter, which ought to be expelled, retained within the body, to the imminent danger of the patient, and the certainty of increasing restlessness, fever, and other symptoms."*

As might be supposed, the mortality, from such a plan, was immense. The keen sagacity of Sydenham discovered the error, and dictated the appropriate reformation, in the revival of the ancient practice, which has since been established by lengthened and concurrent experience.

(To be continued.)

Radical Cure of Prolapsus Uteri.—M. Velpeau recently performed the following operation in an old case of prolapsus of the womb, complicated with a cystocele.

Pinching together the mucous coat of the vagina, he cut away three slips of it, one from the anterior part, and the other two from the sides of the canal. Each of the slips was nearly an inch wide, and two inches and a half long. M. Velpeau had previously inserted the ligatures, so that there was no difficulty experienced in bringing the edges of the wound together. Three months had elapsed when the report was made, and the operation had been successful.

* De Variolis et Morbillis: Tom. vi.

BIBLIOGRAPHICAL NOTICES.

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THIS is a truly valuable publication, and should be in the hands of every druggist in the country. Its tendency is of the most salutary description, enabling, at a trifling cost, and with little labour, the pharmacien to keep pace with the rapid improvements in his science, and avail himself of them.

This little Journal contains a vast amount of interesting and instructive matter, both original and selected. The communications are, in general, of no inconsiderable value, and exhibit a healthful and flattering picture of the condition of pharmacy amongst us. The analecta evidence judgment and practice in the selection.

THE JOURNAL OF PHARMACY has, for a year past, been conducted by PROFESSOR CARSON, assisted by several eminent collaborators, in a manner calculated to create a most favorable impression of his abilities and acquirements. We perceive, by an announcement in the last number, that Dr. ROBERT BRIDGES has been associated with Dr. CARSON, in the editorship. Dr. BRIDGES brings to the task requisites of a high order; and is well known in this city for his ardent and successful devotion to chemical pursuits. He has our best wishes in his new vocation.

NATURE AND TREATMENT OF DISEASES OF THE EAR.

BY DR. WILLIAM KRAMER. *Second Edition of the Author's Treatise on Chronic Deafness, much improved and enlarged.* Translated from the German with the latest improvements of the author since the last London edition, by JAMES RISDON BENNETT, M. D., Member of the Royal College of Physicians of London, &c. &c. &c. Philadelphia: Thomas, Cowperthwait & Co. 1838. 8vo. pp. 250.

WHILST Ophthalmology has been prosecuted with unbounded zeal and assiduity, a singular and lamentable apathy has characterized the cultivation of acoustic medicine. A deplorable ignorance of its principles is avowed even by men whose reputation and attainments, in the other departments of their science, are deservedly great. The natural offspring of this conscious imbecility is an universal

unwillingness to undertake the management of diseases of the ear, and, consequently, they are gladly abandoned to the mercy of the itinerant charlatan, who, from the credulity of the public, and the culpable sluggishness of the physician, pursues, unchecked, the even tenor of his way. The time, we trust, is not far distant, when the profession will be roused from this ignominious torpor, and apply themselves with earnestness and diligence to the study of aural maladies; when it will be deemed an integral part of the education of every enlightened practitioner; will attract a due consideration from every surgical teacher; and will constitute an important and essential qualification in the examination of every student.

The appearance of Dr. Kramer's *Treatise* has already contributed much to remove the opprobrium which has been so long attached to acoustic medicine, and its republication in this country will, we feel assured, contribute not a little to dissipate the profound ignorance in which it is still involved amongst us, and give a strong and salutary influence to its cultivation.

Fruitful as the present century has been of works in all the branches of our art, an unaccountable aridity and paucity distinguish that of aural medicine. Nor at any time has the subject received that attention its importance would seem imperatively to claim. Hippocrates mentions diseases of the ear only in connection with other complaints. Celsus was the first who assigned them an independent station, and offered some good rules for the management of acute inflammations of the ear, and counselled ocular inspection in chronic cases. Galen, although recognising etiological distinctions, recommends a practice founded on the crudest and most indiscriminating empiricism, and which was universally received for more than a thousand years. At the close of the fifteenth and commencement of the sixteenth century, Ingrassius, Eustachius, Fallopius, Vesalius, &c., elucidated the intricate subject of aural anatomy by a series of brilliant discoveries; but without any increase of pathological or therapeutic knowledge. In 1646, Fabricius Hildanus invented the speculum auris; but limited his investigations to the external meatus, and the adjacent parts. Bonet, Du Verney, Valsalva, Vieussens, and others, are more to be admired for the accuracy and minuteness of their anatomical descriptions, than for the luminousness or correctness of their pathological views, which are at best but theoretical subtleties. Two hundred years had now elapsed since the discovery of the Eustachian tube, and no endeavour had as yet been made to address any remedial agent to the ear through it, until

1724, when Guyot, a postmaster at Versailles, attempted it by the introduction of an instrument into it through the mouth. In 1741, Clelland, an Englishman, improved upon Guyot's procedure, by the introduction of a flexible silver catheter through the nose, which was subsequently perfected by the Montpellier physicians, by the substitution of an inflexible tube. At the end of the eighteenth century, perforation of the membrana tympani, as a cure for deafness, was lauded with great extravagance. Wright, Stevenson, Saunders, Buchanan, and Curtis are among the chief English writers on acoustic medicine. Not one of their productions unfortunately, are entitled to any credit. There is, in all of them, a deplorable absence of a genuine scientific and philosophical spirit; and, in general, exhibit a profound ignorance of the subject they treat upon. In France, the works of Saissy, Deleau, and Itard, have obtained considerable reputation. The former of these is nearly worthless; the two latter, especially that of Itard, merit more confidence, and possess intrinsic merit.

Dr. Kramer commences his *Treatise* with a critical review of otiatric literature, in which the reader will find much that is instructive and curious. We regret that we cannot offer any abstract of his critical remarks, obliged as we are to confine ourselves to a brief epitome of his views on the more practical parts of acoustic medicine.

Previous to entering into any investigation of the particular diseases of the ear, our author devotes a chapter to the consideration of the general as well as individual remedies which have been recommended, or attained celebrity, in their treatment. Before accompanying him in this survey, we shall state his opinion of one of those agents which he regards as exercising an important injurious influence on the auditory apparatus, differing as it does from the popular prejudice, though sanctioned by reason as well as fact.

"The application of *cold* in every form acts injuriously on the ear; not only on the auditory nerve, but even on the membranous constituent parts of the organ, whose small supply of blood, and of vital heat, is quite unequal to resist the power of cold. It is, therefore, a most pernicious prejudice, to think of invigorating the ear by washing it with cold water; it should be most carefully avoided. The ear should only be cleansed with tepid water; it should be guarded when bathing in fresh or salt water, or during cold affusions, not merely with cotton wool, but also by an oiled silk cap, and plunging overhead should be abstained from. Damp, cold, stormy weather is equally injurious, and from this the ear should be protected in precisely the same way." p. 29.

Dr. Kramer considers the prognosis in diseases of the ear as by no means bad. The peculiar

structure of the organ, as well as its isolation, from the economy, forbid, it is true, very generally, the hope of any successful interposition of nature, "still it is of the utmost importance to know that diseases of the ear admit of a *very certain diagnosis*, (not, indeed, according to the old established mode,) that in general they run a very chronic course, and that, under the influence of these two circumstances, *they are almost all curable*, if the treatment of them be only undertaken in proper time and with the *proper remedies*." The right moment is too often neglected, "and thus the disease is artificially, and quite contrary to its nature, rendered incurable."

Of the local remedies, which have obtained celebrity in the treatment of deafness, *Electricity*, *Galvanism*, and *Mineral Magnetism*, may be ranged together. Dr. Kramer does not think the efficacy of either of these agents, as yet established. No well authenticated case of permanent improvement, much less relief, having been promulgated. Neither does he attach any beneficial influence to the *moxa*, or *actual cautery*, so much vaunted, especially by Itard, in nervous deafness. *Blisters*, in slight cases, he does not consider as injurious; in obstinate diseases of the middle ear they are useless; and in nervous deafness, positively hurtful. In topical circumscribed inflammatory affections of the membrana tympani and of the meatus, where benefit might be anticipated from revulsion, he prefers the tartar emetic ointment, rubbed in below the mastoid process to avoid all risk of caries. This accident might, we think, be more effectually guarded against by the substitution of a milder irritant, whose action was less capricious; as the croton oil. *Issues* and *setons* he pronounces either useless, or positively mischievous. *Douches* within or without the ear, with a view of exciting the auditory nerve, whether of water or vapour, are absolutely dangerous. Particularly pernicious are *drops and injections*, which usually contain acid, and irritating ingredients. They constitute the popular empirical medicine in deafness. *Warm fomentations, injections of warm milk*, &c. &c., are perfectly innocuous, their application wasting time, when more energetic and appropriate remedies might be resorted to. *Topical bleeding* is alone demanded in acute inflammatory affections of the ear, and in such cases must be freely employed.

When we reflect on the limited and unimportant connection of the organ of hearing with the vascular and nervous systems, we cannot *a priori* anticipate any extraordinary benefit from the influence of general agents. Experience corroborates the hypothesis. *Russian vapour* baths have been highly

commended, especially when the local affection was supposed to have originated in cold. Dr. Kramer has never witnessed the remotest actual relief result from their use. *Salt water* baths have frequently been prescribed, particularly in nervous deafness; positive injury is a most common consequence. The same may be said of warm sulphur, steel, and other baths, especially when any augmentation of vascular action exists. *Emetics* are nugatory in nervous deafness, and can only exercise a beneficial influence in obstructions of the Eustachian tube, when the mouth of it alone is closed. As auxiliary means in acute and chronic otitis, *purgatives* may be employed; in nervous deafness, by weakening the patient, they are baneful. *Bleeding* is admissible only on general principles. *Salivation*, *starvation*, and *inunction* "are never indicated in *any disease of the ear as such*." Still, our author considers that careful attention should be paid to the general condition of the patient, not that this alone will effect the cure, but as preparing the way for the application of special treatment, and increasing the chances of ultimate success.

Dr. Kramer's classification, which is natural and lucid, is so arranged, that "particular diseases shall follow each other in the same order as that in which the constituent parts of the ear that are morbidly affected, are organically connected." His first division is into diseases of the middle, external, and internal ear.

The lesions of the external ear are much more common in childhood, during the development of the frame, than at any other period. They are: 1. Diseases of the auricle; *a*, erysipelatous inflammation; *b*, schirrous degeneration; *c*, furuncle. 2. Diseases of the Meatus externus; *a*, erysipelatous inflammation; *b*, inflammation of the glandular structure; *c*, inflammation of the cellular tissue; *d*, inflammation of the periosteum. 3. Diseases of the membrana tympani; *a*, acute inflammation, and perforation; *b*, chronic inflammation.

The influence of the auricle in the function of hearing has been variously estimated. Itard denies its having any use, whilst Buchanan attaches the highest importance to its integrity. The truth lies between these extremes, the auricle being neither indispensable, nor altogether immaterial to good hearing. As the affections of this part of the auditory apparatus, are neither distinctive, nor demand a different course of treatment than uniform lesions in similarly constituted organs, we shall not here enlarge upon them, but pass to the diseases of the meatus externus.

Our author dwells earnestly on the importance

of ocular inspection in revealing the morbid changes which occur in the auditory passage, and the mebrana tympani. The speculum he deems indispensable to the aurist, and gives us a description, accompanied by a cut, of the one invented and used by himself. It resembles that of Itard, with the exception of the opening at the farther extremity being cylindrical, with a wider funnel-shaped orifice. The inner surface is coloured black, a polished surface confusing the examination, by reflecting the incident luminous rays.

Buchanan determines the soundness of the auditory organ by the perfection of the cerumenous secretion. This is opposed to all experience, there being often no deviation in the quantity or quality of the ear-wax in very many important diseases of the middle and internal ear. Diseases of the auditory canal is more common in childhood and youth, whilst manhood and old age are particularly liable to disorder of the middle and internal ear.

"Careful observation has taught me that all diseases of the auditory passage depend on inflammation of its organic constituent parts, which have a characteristic imprint, according as one or other of these organic parts is attacked. Diseases consequent upon these forms of inflammation, have no claim to be considered as independent diseases, but are naturally classed according to their origin." p. 86.

Erysipelatous inflammation of the meatus externus, is the common cause of those large and sudden accumulations of cerumen in the auditory passage, and which is often unjustly attributed to neglect and want of cleanliness on the part of the patient, but which, in reality, is a morbid product, whose removal no patient can affect, as the sensation of the canal, naturally acute, is heightened by the inflammatory action, and even at its anterior part will not endure the slightest touch. The prognosis is highly favourable, and the treatment simple and certain. The small syringes generally used, Dr. K. considers as inoperative, from their holding an insufficient supply of fluid, thus unnecessarily prolonging the operation; and the length and tenuity of the tube permitting it to be pushed too deep into the meatus of restless patients, occasioning unnecessary pain, and injuring the membrana tympani. He therefore employs an "ear-syringe, three inches in length, holding an ounce and a half of water, furnished with a pipe three quarters of an inch long, with an opening sufficiently large to allow of a powerful stream of water."* Simple lukewarm water alone need be employed, and will fulfil every indication. After the removal of the viscid cerumen has been accom-

plished, should any redness of the meatus be discovered, a solution, containing a grain of the acetate of lead to an ounce of water, may be dropped in, and in obstinate cases, counter irritation may be effected, by employing the tartar emetic ointment (or croton oil) behind the ear. Should there be evidence of ulceration of the meatus, it should be smeared with the tincture of myrrh or opium.

Inflammation of the glandular structure of the meatus, commonly known as *external catarrhal inflammation*, is the cause of the fleshy excrescences of the auditory canal. The disease, in its worst and most chronic form, never extends beyond the limits of the glandular structure. The most acrid secretion, though producing excoriation, never causes true ulceration. There is considerable redness and tumefaction of the auditory passage, with diminished calibre, extending to the entrance. After the first few days, there is a serous or mucopurulent discharge from the meatus, sometimes un-irritating, yet often corrosive, varying in quantity, of a green or yellow tint, streaked with blood, dirty or whitish, and of a sweet or very offensive ammoniacal odour. Tinnitus occurs in most cases. After some time, the walls of the meatus are found covered by soft, spongy, vascular, vesicular, sensitive granulations, pedunculated or globular. These, though sometimes of a cartilaginous or bony hardness, spring from a broad base, are insensible, and of a pale red colour. The most frequent *exciting cause* of the disease, is the application of cold. Collections of indurated cerumen can never be classed as a cause. The prognosis is altogether favorable, where the inflammatory tumefaction is general, the disease yielding readily to a judicious and timely treatment. But where the glandular structure at the bottom of the meatus is alone involved—if the secretion be scanty or serous, the swelling insensate, and the polypi pale red, with a broad base, and hard, it may be viewed as a totally *incurable state*. The radical cure of pedunculated growths, as above described, is often tedious, the root remaining from which fresh vegetations spring. The only certain sign that the glandular integument is free from inflammatory excitement, is the re-appearance of the cerumenous secretion. In the treatment of the disease, cleanliness is of paramount importance, and the meatus must be syringed out several times a day, with lukewarm water. Sometimes cool, or cold water is more grateful to the patient; when such is the case, his wishes should be gratified. When the disease, as it often does, depends on constitutional causes, or cutaneous affections, the general principles of special therapeutics must be energetically employed.

* Ear syringes, of this construction, can be had of J. C. Turnpenny, druggist, N. E. corner of Spruce and Tenth streets.

When insects have entered the auditory passage, and elude the grasp of the forceps, sweet olive oil should be dropped into the ear, with the view of killing them; but no acrid, or irritating application should be used.

Phlegmonous Inflammation of the meatus, is of rare occurrence, and may be distinguished from the species just mentioned, by its invariably passing, as elsewhere, into suppuration. The absence of any carious, bony substance at the bottom of the abscess, prevents it being confounded with periostitis of the osseous portion of the auditory canal. The treatment should be such as will facilitate the formation of pus.

Inflammation of the periosteum of the meatus externus, is invariably followed by caries, and when the dead bone has been removed by exfoliation, the curative efforts of nature are often so powerful as to completely obliterate the canal for some lines in length. The prognosis is of a very gloomy character; the tendency of the strictured parts, after division, to reunite being considerable. Our author is unable to detail any complete cases, as none of his patients had sufficient perseverance to await the termination of the treatment.

Views, the most erroneous and gratuitous, have been assumed respecting the diseases of the membrana tympani. No hypothesis is more untenable than that of the relaxation of this membrane, as one of its morbid conditions. That of a preternatural tension is equally groundless. All its diseases are the result of inflammatory action. That rupture of the membrana tympani can occur as a primitive lesion, unpreceded by inflammation, our author denies, though vouched for by Du Verney, Leschevin, Itard, Saissy, and Curtis. Many authors still maintain the opinion that perforation of the membrana tympani does not necessarily impair the integrity of the auditory function; but this, Dr. Kramer thinks, arises from an imperfect method of comparison, there being no acknowledged invariable standard of admeasurement. Careful and frequent examinations have convinced him, though not entailing necessarily complete deafness, it is always followed by more or less dulness of hearing.

The only recognised diseases of the membrana tympani are, according to Dr. Kramer, those of an inflammatory nature, and their sequelæ, as opacity, thickening, perforation, purulent secretion, and polypous growths. The inflammatory nature of common *earach*, he thinks, is too often overlooked, and the patient, in consequence, subjected to a local irritative plan of treatment positively noxious. The curative means he employs to combat the af-

fection, and which he represents as successful, are strictly antiphlogistic. In this, as well as the inflammatory disorders of the meatus, he appears to place great confidence in a solution of the acetate of lead—from one to ten grains to the ounce of water—dropped, three or four times a day, into the ear. The polypous growths which arise on the tympanal membrane, and usually have a short peduncle, he removes with a delicate double-edged knife, having a bent, sickle-shaped blade, and a blunt, rounded extremity, the remains of the parasite being touched with lunar caustic. “But the caustic is often far surpassed in efficacy by the acetate of lead, applied in the form of solution, as the reproductive power of the root of the polypus is thus, with most certainty, kept down.” p. 131.

“If the membrana tympani be considerably thickened, quite insensible on being touched with a probe, and of cartilaginous hardness; and if, in consequence of this, the hearing has seriously suffered, there remains nothing for the improvement of the latter, but *perforation of the membrane*. Even in those cases, however, in which the operation is fairly indicated, it ought not to be had recourse to, excepting when both ears are affected in the same way, and suffer simultaneously from a high degree of difficulty of hearing; or, when the second ear, the tympanic membrane of which is not diseased, yet suffers from difficulty of hearing so incurable that perforation of the membrana tympani affords the only prospect of probable improvement. To this permission for the performance of the operation, I must, however, annex the following clause: that the most careful investigation of the ear to be operated on, must have proved that it is suffering from no other morbid condition, by which the success of the operation would be rendered fruitless.” p. 132.

The veritable indication for the puncture of this membrane, is when it is preternaturally thickened, with entire absence of any co-existent aural affection.

The success of the operation depends on the permanence of the opening. Dr. Kramer prefers, to all other instruments, Himley's punch, which, by a gentle rotatory motion, removes a small circular portion of the membrane, and thus prevents subsequent occlusion. For the performance of the operation, the patient should be put in a strong light, with his head inclined to the opposite shoulder, to permit the solar rays to fall directly on the membrana tympani. The speculum is introduced into the meatus, with the left hand, and “the punch steadily and carefully conducted to the anterior and inferior third of the membrane, and then passed through with a gentle rotatory motion.” (p. 137.) Unless cartilaginous degeneration has taken place, it readily yields, and usually a drop of blood alone issues. Should a puriform mucus flow from the

puncture, and be found on the punch, disease of the middle ear exists, and no benefit will succeed the operation. Catgut bougies, &c. are all unnecessary to keep open the aperture.

Dr. Kramer concludes his chapter on the diseases of the membrana tympani with a section on *chronic inflammation*, which he regards, from the usual accompanying sound state of the meatus, as an idiopathic, independent affection. Its development is latent and mild, and consequently dangerous. The prognosis is very unfavourable, even under the most fortunate circumstances, it proving utterly intractable.

(To be continued.)

CLINICAL LECTURES.

LECTURES ON CLINICAL MEDICINE, *delivered at the Philadelphia Medical Institute, by W. W. GERHARD, M. D., Physician to the Philadelphia Hospital, &c.*

APOPLEXY AND INFLAMMATION OF THE BRAIN, * (CONTINUED)—FUNCTIONAL DISEASES OF THE BRAIN.

Friday, June 8th.—I shall, this afternoon, again call your attention to some organic and functional diseases of the brain. It was my intention to have confined myself to the subject of functional cerebral diseases, but, owing to the termination of one of the cases of apoplexy, following acute softening of the brain, noticed in the lecture on these subjects, at the post-mortem examination of which some of you were present this morning, I am induced to recur to the topic. The impossibility of understanding the subject of organic diseases of the brain without a knowledge of their pathology, is well exemplified by the case under consideration, while, on the other hand, you have seen how exactly the phenomena after death coincided with the condition, which we were able, from the symptoms, to announce during life, and how entirely our prognosis as well as our diagnosis has been confirmed by the result.

Pathological anatomy becomes a most useful aid in the study of disease when we examine thus closely the connexion between the symptoms and lesions. The changes detected after death explain the phenomena which have occurred during life, and by giving us a clearer notion of the different periods of the disease, not only facilitate diagnosis, but are of great utility in the treatment of disease. We also acquire by this means a more thorough conviction of the harmony and regularity of the laws which govern disease. You would not have so well understood the connexion between diseases of the heart and acute rheumatism, if, a few days since, in a lecture on pathological anatomy, I had not been able to demonstrate the adhesions which closely connected the heart to the pericardium and occurred during an endo-pericarditis, complicating a most severe rheumatism, which I treated success-

fully in the summer of 1837. The case was not the less interesting, from the fact of the patient dying of a totally different disease, (tuberculous meningitis) in a ward not under my care; so that the evidence of the former pericarditis was presented in still stronger relief than would have happened if the patient had remained under treatment. The present case is another illustration of the regular connexion of the symptoms of disease with particular lesions, and, if you have any scepticism on the subject, may convince you that in our description of disease, we do not enter the land of imagination or fable.

This case was that of Fisher, one of the blacks alluded to in Lecture VII. He entered the hospital, a short time after having been seized with loss of consciousness and other symptoms, denoting an attack of apoplexy. The inflammation, excited by the clot of blood thrown out, induced an inflammatory softening of the structure of the brain, which seems sometimes to be a useful process, and promotes absorption of the clot; it occurs from the same cause that gives rise to inflammation, wherever a foreign substance is present in any portion of the body. The train of symptoms, announcing the existence of acute softening of the brain, we treated by cupping, purging, and a regulated diet, not using general bleeding from the enfeebled condition of the patient. Under this treatment, he was slowly getting better—he could crawl about the ward, and could articulate short sentences, when yesterday, he was seized with a fit of convulsions, as the nurse termed it, and was found by one of the resident physicians in a state of coma, with dilated pupils, &c., which soon terminated in death. The examination after death, this morning, explained the occurrence of these symptoms.

We found, first, the remains of the old apoplexy, which had taken place a year ago, probably a few days before the man's admission, as nearly as we could gather from his imperfect account of himself. The disease had occurred at several different points of the left hemisphere of the brain. The left corpus striatum was shrunken and shrivelled up, and unnaturally hard and indurated. On incising it, at the depth of the eighth of an inch, a well marked cyst was found, rather more than an inch long, and half an inch broad, lined with the usual serous membrane, which was not quite complete; a part of the walls of the cyst were composed of loose cellular substance, filled with an opaque liquid. This serous membrane, lining the cavity, was not a true but an adventitious serous membrane, or rather sero-cellular, such as is thrown out in inflammation of the pleuræ and pericardium.

I have already told you in a previous lecture, that these cysts are left after the complete absorption of the clot of blood. The evidence that they really arise from this cause is entirely complete; it might, indeed, be inferred from the facts which relate to the cases just pointed out, but if you are not able to follow every step of the reasoning, I would refer you to the work of Dr. Rochoux. The cyst in question occupied one of the usual seats of cerebral hæmorrhage.

In addition to these morbid changes, there were the traces of a large clot on the side of the brain, the conformation of which was obviously altered

* This lecture did not, in the order of time, follow those which immediately precede it in the Examiner; but the obvious connexion of the subject with that of the last lecture, has induced us to adopt the present arrangement.

by a depression on the middle lobe of the left hemisphere, just behind the temporal muscle, quite unconnected with any alteration of the bone.

The membranes adhered very closely to the substance of the brain, and beneath them, was a partial softening of the medullary substance, which was of a light yellow or cream colour to the depth of about an inch, with complete destruction of the cortical substance in a space of two and a half or three inches square, that is in the whole extent of the depression, necessarily rendering that portion of the brain totally unfit for use. At the posterior part of this softened portion, was an imperfect cyst, more than an inch long, the walls of which were formed by a loose cellular substance, extending to the distance of from a quarter to a third of an inch. Near the centre of the same hemisphere, about an inch from the summit of the brain, was a third cyst, scarcely an inch long, of about half that breadth, and somewhat flattened. Its walls were formed by hard and yellow medullary substance, and it was filled with a transparent liquid. One fourth of the left hemisphere of the brain was, you thus see, destroyed; it was, besides, distorted and drawn back, to a degree that I never before witnessed; even the anterior portion of the brain was turned partially round and backward; this distortion may have interfered not a little, with the exercise of the functions of the brain, and was the necessary effect of cicatrization after a complete loss of cerebral substance.

From this disorganized condition of the brain, which rendered a large portion of it as useless as if it had been separated from the body, and caused the entire removal by absorption of another part, you may understand the cause of the complete paralysis of the right side of the body, and its necessary incurability, which I predicted. But, in addition to the immediate consequences of the apoplexy, other changes had taken place in the brain, not necessarily the result of hæmorrhage, as the recent active inflammation, from which the patient perished, which occurred from softening around the old cyst.

A symptom worth noting, was the loss of power of articulation, under which, you remember, the man laboured for a long period; his answers were confined to the word no, and were afterwards brief and confused. Now there was no lesion, except that caused by the contraction, in the anterior part of the brain, which, of course, disproves Bouillaud's assertion, that the vocal powers are connected with this portion—a point which had, indeed, been, previously, satisfactorily settled by the observations of Andral, and others. In this instance, the cortical substance of the brain was affected, although not in the anterior portion: the cortical substance, I have no doubt, presides over the functions of the intelligence and of the voice. The corpus striatum is supposed to preside over the faculties of motion of the upper extremity; and here, you see, the patient regained the power of walking, though not that of moving his arm. This, however, proves nothing; for it is a regular occurrence in hemiplegia, following apoplexy.

The therapeutics of this case are important; the impossibility of curing it is sufficiently evident, and, consequently, the necessity of confining your

efforts, in similar cases, to such a plan of treatment as will palliate and improve the symptoms. Hence, too, you may doubt as to the propriety of addressing stimulating remedies to the brain and nervous system, as *nux vomica*, or its active principle, *strychnia*, to relieve a paralysis, dependent on destruction of the cerebral structure. These remedies were much in vogue at one of our institutions a few years ago, for the treatment of apoplectic hemiplegia. I witnessed most of the cases, and I never saw them produce decidedly good effects, although pushed so far, in some cases, as to produce convulsions. Many patients, afflicted with hemiplegia, in a degree recovered; but this occurred from the mere process of absorption of the clot, and not from the effect of the remedy. Indeed, I must candidly express my opinion against the usefulness of the remedy; and, as to its inconvenience, I am convinced that it often increases the activity of the circulation in the brain, surrounding the clot, from the over-stimulation of this organ. It is a valuable remedy in neuralgic paralysis, where there is functional disorder of the brain, or mere want of tone in the limb; but, where there is any considerable derangement of the cerebral structure, I am convinced that it is often a hurtful medicine, even when given in minute doses, and suspended as soon as its effects appear. I make these remarks upon the *strychnia*, because its use seemed indicated in one of these cases of paralysis; and although I anticipated but little effect from it, I consented to its administration; but it very soon became necessary to suspend it, from the increase of the difficulty of speech, and rigidity of the limbs. I am aware that many physicians of high judgment employ and recommend the *strychnia*; but my own observations, which were the more unbiassed, as they were made upon the practice of others, and not upon my own, have led me to a different conclusion. The true therapeutics in paralysis from apoplexy, consist first in subduing the inflammatory symptoms or the active congestion of the brain, by blood-letting, appropriate applications to the head, and purging; afterwards in waiting patiently and quietly, in keeping from the patient all causes of irritation, and in regulating his diet; and, after the clot has been removed, in addressing gentle stimulation to the paralysed part; or, what is better, in directing the patient to move it himself. Even this slight, and, as it were, natural mode of exciting the brain, may be attended with inconvenience. I lately directed a patient, in whom the paralysis was already of some months' standing, to move his arm every day by a powerful effort of will, and he went on until he succeeded in raising his hand to his head, but the brain became excited, he was stupid, and his speech thicker, and I was compelled to make him desist. Avoid, then, all causes of excitement, whether medicinal or other, in these cases of paralysis, which are either the mere effect of a considerable rupture of the fibres of the brain, or are connected with the subsequent inflammation, till very late in the treatment, and let it be confined to external stimulation.

The case which we have just been noticing, illustrates extremely well the advantages of a knowledge of pathological anatomy, in the study of

diagnosis. We were able to define with exactness the morbid condition of the brain, as you may see from a report of the lecture which was published in the Examiner, which corresponds precisely with that which a post mortem examination has laid open. Now this verification, by means of examination after death of the lesions in a certain number of diseases, enables us to form a much more vivid and distinct picture of the state of the analogous cases. We conceive, as it were, in our mind, a well defined picture, and, by a sort of second sight, can discover most of the changes, which are, under ordinary circumstances, completely concealed. If we gain but little direct assistance in therapeutics, we obtain a sort of touchstone, by which we judge of the power of remedies, and thus acquire more accurate notions of the effect of medicinal agents; we learn to discriminate between the natural course of a disease and the modifications impressed upon it by art. In itself, pathological anatomy is a mere instrument; but by its aid we are enabled to know positively a multitude of facts, which we can barely conjecture from the unaided study of symptoms. Now, I would impress upon you the necessity of not attaching an exaggerated importance to what is a mere means of investigation; you must never isolate the lesions of an organ from the symptoms which accompany them. I am the more earnest in insisting upon this matter, because you might imagine from the careful pathological investigations which I endeavour to make, that I value this sort of knowledge for its own sake; this would be an error into which I should be loath to fall.

In concluding these lectures upon diseases of the brain, I have some few remarks to make upon certain functional affections of that organ, occurring during the course of various disorders of the body. These affections are very numerous, and often not a little puzzling in their character. For example, you no doubt supposed, when listening to the detail of symptoms denoting tubercular meningitis, that the features of the disease must be always clearly remarked, and yet there are affections that sometimes simulate it to a degree, that will embarrass a very experienced observer. It is no easy matter always to distinguish between diseases of the brain, itself, and those which are symptomatic of other affections. Now, this can only be done by becoming so familiar with these functional changes, that you may at once hold them up, as it were, in your mind's eye, and diagnose between them and the true cerebral diseases, by a rapid process of comparison, or, as it is sometimes termed, by way of exclusion. That is, you run over the list of these analogous disorders, and then rapidly leave them out of your calculations, because some essential symptoms may be wanting.

First, in fevers, intermittent and continued, particularly the latter, there occurs a train of cerebral symptoms, which are placed amongst the most important symptoms of these disorders. Continued fevers, in this section of country, are almost wholly the typhous and typhoid fevers, with the exception of the occasional occurrence of such as are styled bilious and ephemerous. In Paris, continued fever rarely takes any other type than the

typhoid; while, in Ireland and Great Britain, it is generally the typhus. In both these fevers, the brain is affected at the commencement, but in a less manner than in meningitis, the early symptoms of both being headach and dizziness, with loss of strength. In the second stage, there is stupor, of great intensity in typhus, and of slighter in typhoid, often running into delirium. We have, at this time, also, in typhus, considerable alterations in the nervous system, indicated by spasms and subsultus, resembling those which occur in delirium tremens. The senses, also, are impaired in the second stage of both these affections, but more severely in typhus than in typhoid fever. In the last stage, we have coma, complete loss of the powers of intelligence and of motion, and very nearly complete suspension of the senses. Sometimes, we have violent, noisy delirium, which is to be looked upon as an irregular symptom, usually depending upon an accidental complication of meningitis with the fever; when this violent delirium occurs, it is always to be considered and treated as a secondary meningitis. The ordinary moderate cerebral symptoms, are, as it were, essential to the disease, and do not demand special interference, unless they should become intense, when they may be the immediate cause of death, and are to be treated as inflammations of the brain, by local depletion with cups and leeches, and by cold to the head, and the like. If this secondary meningitis of fever should occur very late in the disease, general bleeding is not often advisable. Treatment, although useless in slight cerebral symptoms, becomes essential, when they reach a high degree of activity. After coma supervenes, it is proper to abandon a depletory course, and the cold effusions, and you are now to resort to counter-irritants, sinapisms to the feet, blisters to the nucha,—remedies which are improper during the violent stage of the secondary meningitis. In the partial epidemic of typhus which occurred last winter, the fever was attended with more active cerebral symptoms than had previously shown themselves. I used local treatment, in nearly every case, with extreme advantage, and found that after removing the meningitis, the fever was almost free from danger.

In the intermittent and remittent fevers, the functions of the brain undergo alteration, although there is rarely active inflammation of the organ. There is less disturbance of the powers of motion than in the typhous and typhoid fevers, subsultus seldom occurring. The senses are not affected except in the height of the paroxysm, there is little ringing in the ears. These symptoms, however, are sometimes present in the malignant intermittents that we meet with in our hospitals, in the summer, occurring, principally, in sailors who have contracted the affection on the coast of North Carolina. In such cases, local depletion is not often advisable, for the cerebral symptoms are not confined to the paroxysm, nor do they resemble those of acute meningitis; they are rather loss of memory, sighing, and other signs of enfeebled nervous energy. They are best managed by large doses of quinine during the interval, and when in the paroxysm, with wine and volatile alkali. Upon these symptoms the danger of malignant intermit-

tents chiefly depends. Of course this mode of treatment is not designed for those cases in which there are signs of more active vascular excitement, requiring the treatment of the acute cerebral symptoms of typhus. Your object must be to cure the intermittent.

In pneumonia, there is usually some slight disturbance of the brain, which, indeed, accompanies, in a greater or less degree, all febrile affections. Special treatment is required, only when there is either active delirium, or much stupor. When these exist, the case may be very readily mistaken by one not well accustomed to recognise pneumonia. In the cerebral complications of pneumonia, the peculiar flush of the face, the dyspnoea, and dilatation of the nostrils, serve to distinguish the nature of the affection, while, if there be meningitis of a primary character, it will be marked by the state of the eyes, frown of the forehead, and absence of the purple hue, and dark red flush. In the cerebral complication of pneumonia, a special treatment is occasionally demanded, consisting in purging, and antiphlogistics directed to the brain.

In inflammations of the serous membranes of the thorax or abdomen, the brain is rarely implicated, except to a slight extent, corresponding with the vascular excitement. The same may be remarked of inflammation of the mucous membranes; in affections of the bowels, the functions of the brain are not disordered, except in the last stage. If, however, the mucous membrane of a large extent of the alimentary canal be simultaneously attacked, then the brain sympathizes, and delirium very commonly ensues. In very severe epidemics of dysentery there is also extreme prostration of the nervous functions somewhat similar to what occurs in intermittent fevers.

The connection between functional disorder of the brain, and anemia, was alluded to in the last lecture, and illustrated very strikingly, by the history of a case which I then detailed. The sympathetic affection of the brain, in jaundice, is well known. We have a patient at this time, in the hospital, labouring under chronic gastritis and jaundice, in whom this cerebral alteration, depending on jaundice, is very manifest, and last year there were several marked cases of this kind. It is not of an inflammatory character; the symptoms being merely stupor and prostration, with subsultus, and particularly, loss of the memory. This set of symptoms indicates the connexion which exists between this affection and malignant intermittent and remittent fevers, and in both depends, in my opinion, upon the altered state of the blood which accompanies hepatic disease. Treatment is to be confined almost entirely to sinapisms and blisters, and occasionally some slight stimulants in addition to the general treatment for jaundice—cupping or other depletion should be rarely used. Dr. Marsh, an Irish physician of reputation, has also called the attention of the profession to the cerebral symptoms of jaundice, and agrees with me in opinion as to their great danger. Anemia, dependent on a vitiated condition of the liver, is to be treated by tonics, iron, porter, and a generous diet. But in many disordered conditions of the cerebral functions, the proper remedies are to be

found amongst the narcotics and antispasmodics. The mild stimulant practice must, of course, be changed, if the patient get worse under it, or if you have any symptoms of more active inflammation of the brain. On the same principle is based the practice, recommended by Dr. Graves, for the sleeplessness and slight delirium in the latter stages of typhous fever, consisting in a combination of opium and tartar emetic. This is an excellent combination; the antimonial slightly nauseates, promotes gentle perspiration, and predisposes to sleep. The virtues of Dover's powder depend on the same union of opium with an analogous medicine, ipecacuanha, and, if the alimentary canal be in an irritated condition, this combination is to be preferred.

I have entered thus minutely into the detail of these functional cerebral symptoms, and into the points which distinguish them in different affections, because the symptoms, which are laid down in books, are nearly identical in all these affections. The order of symptoms, however, is very different and diagnosis becomes comparatively easy if we attend to their successive development.

DELIRIUM TREMENS.

Tuesday, June 5th.—I shall, to-day, take up the subject of delirium tremens, postponing the consideration of diseases of the digestive organs, into which I had intended to enter, until they present themselves in greater numbers. Owing to the tardiness of the season, there is just now a singular paucity of them in our wards at the hospital, and I therefore defer the subject, until I can more amply illustrate it, which I will be able to do as the summer advances.

Delirium tremens is an affection which has special claims upon your attention, from the lamentable frequency of its occurrence, in our country. It is here, amongst the labouring classes, particularly the Irish, one of the most common of diseases, although in France and other continental countries of Europe, comparatively rare. During my residence in Paris, I did not see a single case of it: in the hospitals of that city, it is a disease that is never thought of, in patients who enter with cerebral symptoms, although with us, cases of delirium tremens are more numerous in our hospitals than those of all other cerebral diseases together.

I shall begin the subject, according to my usual practice, with the history of a case, illustrative of the affection. It is one, offering a mild type of it, and is, therefore, on many accounts, the better for study, as the symptoms are more characteristic of the disease in its early than in its latter stages, when they are more easily confounded with those of other forms of cerebral disturbance. The patient had been an inmate of the alms-house, previous to his entrance with mania a potu. He was an Irishman, about forty years of age, a clerk by occupation, reduced by habits of intemperance. He left the alms-house on the tenth of May, to look for work, and remained out for ten or twelve days, without drinking much, at the end of which time, he began to commit excesses, and, after a debauch of two or three days, slept out on a cold, rainy night, and was taken afterwards with a diarrhoea,

which continued till yesterday. This diarrhœa he attributed, perhaps with reason, to the effects of cold, as he was pretty well ashamed of his drunkenness, and seemed anxious to magnify the symptoms, which were trifling, into a dysentery. In addition to the diarrhœa, he was taken, on Saturday last, with oppression across the breast, some cough, and also with vomiting, which arose, probably, from exposure, but may have been merely the termination of the debauch. He soon diminished the amount of spirits, which he was taking. In place of one or two quarts a day, he reduced his allowance to one or two glasses. On Sunday, the vomiting persisted, and so great was the irritability of his stomach, that he rejected even cold water; there was also purging. The nervous system now began to be affected, for he suffered from tremors, and the want of sleep on the previous night. These symptoms were as well known to the patient himself as they are to most habitual drunkards. At the entrance of the patient, we recognised a case of delirium tremens, which was well marked in all its features. There was nervous agitation, shown by the trembling of the hands and body, with obvious contraction of the pupils, which is nearly an infallible symptom in the beginning of delirium tremens; he had besides, restlessness, anxiety, and fear, disturbances of the mind, which are also strongly characteristic.

The man was placed yesterday under treatment, taking \mathfrak{z} ij. brandy with a small quantity of laudanum, to allay the irritability of his stomach. He slept eight hours last night, and his reason is now somewhat better. He is still labouring under a slight degree of mental hallucination, seeing various objects which he knows are not actually before him. For, in this stage of the affection, these patients are well aware, that the objects which they see have no real existence; when you talk to them on the subject, they will laugh, and tell you it is a mere notion from the horrors. In the more advanced state of the disorder, this distinction is lost, and they really believe the objects to exist, as the brain represents them.

I shall now proceed to detail to you the general symptoms, which characterise delirium tremens. The case of the man, whose history I have brought before you, may not present these symptoms in a regular series as you will have an opportunity of observing in other cases of the diseases where the symptoms are not checked by art. In the stage succeeding that in which he now is, you will find distinct hallucination of the senses, in which the objects presented to the mind, are nearly always of one kind, and give rise to fear, sometimes to the most intense terror. Thus, patients imagine that there are serpents crawling over the walls of their cells, that the house is falling in upon them, or is on fire, or that some person is about to discharge fire-arms upon them, from some real or imaginary aperture in the wall of the apartment. In the cells at the Pennsylvania Hospital, there is a hole in the wall, near the ceiling, for purposes of ventilation, and I there found a very common idea with patients was, to imagine that guns were pointed through this sort of loop-hole. The presence of tormenting devils is another vision not uncommon; in short, the patient is afflicted with the sight of al-

most every kind of terrible objects. This condition lasts for one or two days, at the end of which time the delirium loses its violent character, and is succeeded by incoherence, which indicates the approach of the third stage. There is none of this in the second stage, the patient being always able to talk in a continued and connected strain, while, in the third stage, his sentences are incomplete, and his tone is muttering—this latter symptom being very characteristic of the affection, and enabling us to pronounce at once as to its nature.

While these cerebral symptoms are advancing, another set is also taking place, in relation to the countenance and intellect. In the second stage, as you remarked yesterday, the expression of the face was that of fear, anxiety, and restlessness; still, when addressed, the patient could compose his countenance, and answer questions, if his memory was not too much taxed. But, in the third stage of the disease, the faculties of the memory are altogether lost, the patient being unable to utter a single sentence containing a rational answer. This fact is important in forming a diagnosis.

The next symptom is the condition of the pupils, which are almost always preternaturally contracted, during the second stage, and in the beginning of the third, and not dilating until effusion takes place: this contraction is sometimes extreme, the pupil not being larger than the point of a pin.

The state of the skin is next to be noted. There is often profuse sweating, particularly in the third stage. This you are to look upon as dangerous, from the weakness it induces, and as an indication of a very severe form of the disorder.

These are the chief symptoms connected with the state of the brain, except insomnia, which I mentioned, in describing the case of the man in the hospital. This is not, however, as has been asserted, the turning point of the disease; it is an important, but by no means, the chief or only sign.

Now let us examine into the condition of the alimentary functions. At the beginning of delirium tremens, they present but little variety. Anorexia is an almost invariable symptom: the patients have been drinking, until the powers of the stomach have become exhausted, and it then rejects every thing, even cold water, with disgust. This aversion to food is one of the symptoms by which you recognise the affection. The bowels are generally costive, but there is no regularity in their condition. There is thirst, from the fever, and irritation of the stomach, and increased by the restlessness of the patient.

These, then, are the chief symptoms which characterise delirium tremens. It might seem, at first sight, that they are so well marked, that there can be little danger of confounding them with those of any other disease. But delirium tremens often goes hand in hand with some other affection, and one of the two may be masked by the other. Hence, the difficulty of diagnosis. If there is delirium tremens alone, it is easy to recognise it; but if it occur along with inflammation of the brain, or with typhus fever, or in subjects who have been previously insane, you may be at a loss to distinguish it. It may also be complicated with congestion of the brain, and apoplectic and epileptic fits. How are you to diagnosticate it, under these

various circumstances? You are, in the first place, distinctly to impress upon your minds the particular class of symptoms belonging to delirium tremens. The first of these is the tremor; then we have the intellectual disturbance, consisting in the fear of some supposed terrifying objects: this kind of mental disturbance does not occur with constancy, or even frequency, in any other disease of the brain; in inflammation of the membranes, there is much more commonly great irritability, and even disposition to commit actual violence. I saw a remarkable instance of this, last year. A soldier was brought into the hospital, who had attacked the recruiting sergeant and several of his comrades, it was supposed, from delirium tremens. However, I readily discovered his disease to be meningitis, from the character of the delirium, and the active circulation in the vessels of the head. He rapidly recovered under the antiphlogistic treatment already described. The next symptom, is the contracted condition of the pupils, which is a less peculiar sign. A third, is the power which the patient long retains of arresting his delirium, and directing his attention to other objects. The absence of all affection of the senses, other than hallucinations, is another point establishing the diagnosis: there is no paralysis, no subsultus—if these are present, you may suspect that you have inflammation of the brain, either alone, or complicated with delirium tremens. When meningitis and delirium tremens co-exist, some writers regard it merely as a modification of the latter affection, and lay great stress on its frequent occurrence during the fit of intoxication, before the alcoholic excitements have been suspended. The precise mode of commencement is, however, often difficult to determine; and I therefore attach much more importance to the symptoms, themselves, than to their origin.

The next point is, to distinguish between delirium tremens, and the disturbance of the brain, which occurs in typhus fever. If the latter disease prevail as an epidemic, the diagnosis will be troublesome: for the delirium of typhus, stupor, incoherence, &c., is very like the third stage of delirium tremens. There are, however, other symptoms of typhus, which may serve to establish the distinction; these are the effusion of blood throughout the cellular tissues of the body, the suffusion of the eyes, and the absence of the abundant sweats of delirium tremens. You will, however, occasionally meet with a combination of these affections, which occurs the more frequently because drunkards are especially liable to typhus. In these cases, the symptoms proper to delirium tremens subside as the stupor and muttering delirium of typhus become more prominent.

We now proceed to examine those cases which are complicated with organic or functional lesions of the brain, of a more chronic kind. These usually happen as follows:—A man, of a plethoric, full habit, drinks, until his intelligence becomes affected, and eyes suffused, and then falls into an apoplectic or epileptic fit. In persons predisposed to epilepsy, intemperance is apt to induce a fit of the disease, and the diagnosis remains exceedingly difficult, until you are able to obtain the previous history of the patient.

Those who are habitually of a very full and plethoric habit, are apt to fall into a kind of apoplectic fit from congestion of the brain. Hence, the intemperate, who are in easy circumstances, and are given to excesses in eating as well as drinking, are rarely attacked with delirium tremens without convulsions, and the disease is, in such persons, extremely dangerous. These cases are not to be managed according to the ordinary routine.

Although delirium tremens may complicate all possible diseases, I can by no means, however, admit intemperance to be the universal cause of disease among the poorer classes who fill our hospitals, that many persons suppose it to be. Although there was no delirium tremens in the hospitals of Paris, there was the same range of fatal diseases which we meet with here, independent, of course, of the complications resulting from the effects of drunkenness. The chief dangers of intemperance, consist in the demoralising tendency of this habit, and the inability which it induces to the performance of social and religious duties, which are surely quite enough to induce every one to use his exertions in checking the habits of using alcoholic drinks. But people die from its direct effects less frequently than is generally supposed. You must not, however, understand me to deny that diseases are rendered more fatal from previous intemperance; I am merely stating that its influence is often exaggerated; and, in science, I think we are bound to state those deductions which are founded on conscientious observation.

We now come to the causes of delirium tremens. The great cause, is a very simple one—an excessive indulgence in intoxicating drinks. The particular liquor, employed by patients whom we treat at the hospital, is, in nearly every case, whiskey. Brandy-drinkers are, usually, men in easy circumstances, who become habitual drunkards; they fare worse, in attacks of mania a potu, than the whiskey-drinkers, not that brandy is a more dangerous alcoholic combination, but that they who can afford to drink it, are able to procure it in larger quantities, and generally become confirmed toppers, and are not obliged to pass through those periods of forced abstinence which occur with the poor, when their means of indulgence are exhausted. At the Pennsylvania Hospital, the mortality in delirium tremens is greater than at the Philadelphia, not from any superiority of treatment at the latter institution, but because the patients, who resort to the former, are persons in better circumstances of life, and have been indulging to a greater excess, and for a longer period.

The better and purer wines, the French, for example, never produce mania a potu. The same may be said of porter, ale, and the malt liquors, generally. The effect of the stronger wines cannot be well estimated, an excessive indulgence in them generally ending in the use of ardent spirits.

Delirium tremens may occur under one of several circumstances. First, a man may be in habits of daily drinking, but not to the extent of intoxication, say five or six glasses a day. He meets with an injury—breaks his leg, or the like—and is brought to the hospital for surgical treatment. He soon exhibits symptoms of pain and restlessness;

and, the morning after the accident, you will find him in a state of anxiety and timidity, with tremors, and contraction of the pupils. These symptoms indicate the approach of an attack of delirium, and are often called "the horrors," from the dreadful feelings of the patient. They occur in persons in whom the habit of drinking has been suddenly interrupted. This condition is described by Dupuytren, and is by him supposed to depend simply upon the wound or other injury. You may, indeed, have these symptoms, occasionally, in persons of sober habits, and of a feeble, nervous temperament. It is, therefore, proper to be suspicious of this condition of things; but you must not be too hasty in setting it down as the incipient stage of delirium tremens. Soon after, however, you will have some symptoms, which will clear up the case, particularly the occurrence of delirium, of the character which I have described.

The second variety takes place, when alcoholic liquors are suddenly abandoned, that is, when the patient has suddenly abstained from an habitual and free use of them, to which he was accustomed without becoming absolutely intoxicated, or when he has suddenly ceased drinking after a debauch. In this case, delirium tremens usually shows itself on the third day, but, generally, under a mild form, and without much cerebral disturbance.

The third, and most common variety, is that which has presented itself in the patient whose case you have seen at the hospital, and which is always a bad form of the affection. A man drinks till his stomach fails, when he stops from pure inability to take in more, and begins to suffer from tremors. In this condition of the stomach, it may be that a smaller quantity of liquor is absorbed, and a less amount of stimulus has been directed to the brain. So that the disease may, perhaps, at last, arise from the subtraction of the accustomed excitement of the brain. These cases are apt to be extremely troublesome from a complication of gastritis with the cerebral disorder.

The fourth variety is common during the summer season. A man, accustomed to drink, works out in the sun, and the excessive heat develops inflammation of the brain, which becomes complicated with delirium tremens. In the summer of 1830, when the thermometer ranged above 90° in the middle of the days, during nearly the whole month of July, the effects of heat were so fatal, that persons of intemperate habits died in great numbers, either from sudden coma and convulsions, or, if they escaped the first effects of heat, from a complication of phrenitis and delirium tremens. This form of the disease is much more frequent in summer than at any other season of the year, and attended with much danger. This condition demands much discretion of management, being generally complicated with convulsions, and, altogether, a very unfavourable affection.

The duration of delirium tremens is a definite period, well established, from the non-interfering mode of treatment which has been sometimes adopted in its management—the patient is merely shut up and taken care of. I believe that this was the practice of the late Dr. Kuhn, and is nearly followed now in some institutions of Boston, where nothing is administered but a bitter infusion. We

know, then, the duration of the second stage of mania a potu to be usually of three or four days, at the end of which period, the patient either dies or gets well. It may, however, run into a chronic state, or some other disease of the brain, or be followed by incurable mania.

The treatment of delirium tremens would seem to be, and is, in reality, very simple: if it be managed with judgment, the majority of patients get well. The treatment may be reduced to a few general rules, which are the following:

When a patient is brought to you, at the close of a debauch, which has been arrested by the failure of the powers of the stomach, the occurrence of a wound, or other cause, the indication is evidently to tranquillize the general nervous excitement, as well as allay the gastric irritability. The remedy most in use in this country, and in England, is opium. The practice of giving it in very large doses, originated in Philadelphia, and has long been in use at the Pennsylvania Hospital. Dr. Coates published a memoir on the subject, which attracted much attention. The practice recommended, was chiefly opiates, in very large doses, but with extreme care; the patient, if possible, was to be visited before each repetition of the dose. The practice passed to the hospital of the almshouse, and, when I was resident physician there, it was given in doses of three or four grains, carefully watching the effects. In bad cases, four grains were given every two hours, and continued till the patient was put to sleep, or until some symptom occurred to forbid it. This practice was abandoned, not because it was bad in itself, but because it was found that the same case called for a variety of remedies. The plan now is to regard opium as our sheet-anchor, in the treatment of delirium tremens, observing its effects, and abandoning it, or combining with it other remedies, when it does not succeed in relieving the symptoms. It may be given with safety, in doses of two grains, or forty drops of laudanum, every two hours, the patient being seen after every dose. In the ordinary delirium of mania a potu, I scarcely ever give it alone, combining with it other antispasmodics, or some form of alcohol. The good effects of this latter remedy, are well known to the vulgar, who are in the habit of tapering off, as they call it, by drinking less and less each day, when they wish to prevent the horrors. If, however, they have reached the extreme point of a debauch, they are not able to taper off in this way, the alcohol being rejected by the stomach; and it then becomes necessary to add laudanum to the spirits. I gave the patient, whose case was mentioned at the beginning of the lecture, twenty drops of laudanum, in a glass of brandy, and, by this means, was able to make him retain it, although he had before vomited immediately after taking it. This shows that by slightly varying your remedies, you may produce an effect, before unattainable. I have often reflected whether moral considerations ought to prevent the administration of alcoholic remedies; they have sometimes the disadvantage of keeping up the thirst for this kind of stimulus, longer than it would otherwise continue after a debauch, and, therefore, if other means are equally useful, the physician should abstain from their use. But, in

a considerable proportion of cases of delirium tremens, particularly those of a slighter kind, they offer the readiest means of relieving the patient; and when you are satisfied that they are the best remedies for the particular case, you are bound in duty to your patients to resort to them.

If the irritability of the stomach be not great, other antispasmodics may be administered, as assafœtida, camphor, carbonate of ammonia, and Hoffman's anodyne. Of these, the assafœtida and anodyne are the best. Five grains of assafœtida, with a tea-spoonful of Hoffman's anodyne, and ten drops of laudanum, mixed up with the intervention of a little mucilage, given every hour, or every two hours, will often succeed in tranquillizing the patient; or, the laudanum may be given one hour, and the anodyne and assafœtida another. These remedies are directed to the nervous system; there are others to be addressed to the condition of the stomach. For this purpose, a very good one is capsicum, that I first saw employed by Dr. Hewson, of this city. He tried it in a patient, in whom other remedies had failed, a young man, of good fortune, who finally destroyed himself by intemperance. He gave the capsicum in the dose of a grain, in pill, every hour, until he relieved the irritability of the stomach, and was able to act on the nervous system, with opium and assafœtida. Other remedies are employed in New England, as the infusion of wormwood, used in the penitentiary at Boston, which, by restoring the tone of the stomach, acts on the nervous system.

Emetics were recommended, some years ago, by Dr. Klapp, of this city, in the treatment of delirium tremens, and were tried in the alms-house, though afterwards abandoned, for a return to other remedies, the efficacy of which is consecrated by long use. Emetics may do good in stout, robust patients, at the very beginning of the affection, when a dose of ipecacuanha will sometimes break up the train of morbid associations, and arrest the disease. They often quickly relieve in the horrors or the initial stage of the disease. But if the stomach be irritable, and the patient prostrated, emetics, particularly tartar emetic, are manifestly inadmissible. I saw them tried, a year ago, under these circumstances, and the patient was lost. I have tried them myself, and, under favorable circumstances, have succeeded in checking the disease. In bad cases, and where there is prostration, they can do no good, and should not be given hastily.

[The remainder of this lecture will be given in the next number.]

CLINICAL REPORTS.

PENNSYLVANIA HOSPITAL.

[Reported by HENRY H. SMITH, M. D., resident Surgeon.]

List of Accidents, admitted into the Pennsylvania Hospital, from May 30th to June 13th, 1838.

One case of contusion of the foot, caused by a fall; dressed with lead-water cloths, and fracture-box—since discharged. One case of epistaxis; the hæmorrhage had continued for thirty-six hours, previous to his entrance; arrested by plug-

ging the nostril with lint, moistened with tinct. ferri muriat.; the patient was attacked with mania a potu, of which he died. One case of deep burn of the arms and front part of the chest, in a female aged eighty-six years, caused by her clothes taking fire; dressed with Goulard's cerate—death twelve hours after admission. One case of compound fracture of the first phalanx of the ring finger, caused by a spade falling on it; dressed with adhesive plaster, and a splint; afterwards attacked by erysipelas—poulticed, and still under treatment. One case of lacerated wound of the scalp, caused by a fall during a fit of epilepsy; dressed with adhesive strips—since discharged. One case of incised wound of the abdomen; the knife only penetrated a portion of the muscles, without involving the peritoneum; dressed with single suture and adhesive strips—nearly well. One case of fractured clavicle, caused by a fall; dressed with the usual apparatus—no deformity. One case of contusion of the shoulder and hip, caused by a fall from a tree—discharged in three days. One case of incised wound of the abdomen, caused by a stab; the external wound, of one inch and a half, was brought together by a suture, carried deeply through the muscles; death took place in seven hours after admission. On examination, the muscles, peritoneum, both sides of stomach, and pancreas, had been cut; the epigastric artery, and the vessels of the stomach, were divided, and about 42 f3 of blood were found in the abdominal cavity. One case of contusion of the head, face, and body, received in fighting—since discharged. One case of compound fracture of the ulna, two inches above the joint, caused by a blow from a pick-axe; wound dressed with strips, and uniting; arm dressed with two splints. One case of fractured ribs, caused by a fall; dressed with a tight bandage. One case of simple fracture of both bones of the right leg, and compound fracture of both bones of the left leg, caused by falling through a hatchway; the right leg was dressed with a fracture-box, and cold applications; the wound in the left was dressed with lint, wet with white of egg, so as to form an artificial scab; limb placed in fracture-box, and kept wet with lead-water. One case of compound fracture of the skull, caused by a fall against a circular saw in a steam saw-mill; the scalp was much torn and turned back from the skull, for the distance of about six inches by four, for which distance the skull was bare; the skull was fractured, from the lower portion of the os frontis to the vertex, and, near the centre of the head, the saw had penetrated the dura mater, a small portion of which projected; no cerebral matter was seen after a careful washing of the scalp, shaving the head, and removing the pieces of bone; the wound was brought together by adhesive strips, and dry lint applied over the wound, and a bandage; it was also necessary to take up a branch of the temporal and one of the occipital arteries, to arrest the hæmorrhage, which had been considerable, previous to admission. The man died on the third day after admission, and on examination the brain was found wounded to the depth of an inch and a half, with softening around the wound for some distance. The cases reported in the last are still under treatment.